(12) INTERNATIONAL APPLICATION PUBLISHED PURSUANT TO THE PATENT COOPERATION TREATY (PCT)

(54) Title : DEVICE AND METHOD FOR ROBUST DECODING OF ARITHMETIC CODES

(54) Titre : DISPOSITIF ET PROCEDE DE DECODAGE ROBUSTE DE CODES ARITHMETIQUES

1...ENCODER
2...DECODER
6...PROCESSING MODULE
7...PRODUCT MODEL
8...SOURCE MODEL
9...ENCODER MODEL
10...DECODER MODEL
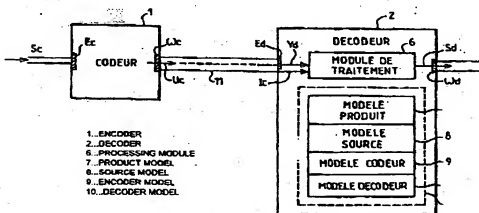
(57) **Abstract:** The invention concerns a decoder (2) comprising a first input for receiving a coded flow of second binary elements (Yd). It comprises a second input for receiving channel properties (Ic) designed to define probabilities of receiving second binary elements, upon transmitting first binary elements, a first module (12) defining a source model (8) adapted to define the probabilities for x-ary symbols associated with transitions between source states in a source state diagram, a so-called product model (7), adapted to define a correspondence between the x-ary symbols and the first binary elements produced in a product state diagram, a product state being a function of a source state, a processing module (6) adapted to calculate probabilities of decoding x-ary symbols, knowing bits of the coded flow of second binary elements from the channel properties (Ic) of the source model (8) and of the product model (7), and adapted to reconstitute the most probable flow of x-ary symbols from said computed probabilities.

[Continued overleaf]

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